```
FFFFFFFFFFFFFFF         111              111            AAAAAAAAA
FFFFFFFFFFFFFFF         111              111            AAAAAAAAA
FFFFFFFFFFFFFFF         111              111            AAAAAAAAA
FFF                  111111           111111         AAA         AAA
FFF                  111111           111111         AAA         AAA
FFF                  111111           111111         AAA         AAA
FFF                     111              111         AAA         AAA
FFF                     111              111         AAA         AAA
FFF                     111              111         AAA         AAA
FFFFFFFFFFFF            111              111         AAA         AAA
FFFFFFFFFFFF            111              111         AAA         AAA
FFFFFFFFFFFF            111              111         AAA         AAA
FFF                     111              111         AAAAAAAAAAAAAAA
FFF                     111              111         AAAAAAAAAAAAAAA
FFF                     111              111         AAAAAAAAAAAAAAA
FFF                     111              111         AAA         AAA
FFF                     111              111         AAA         AAA
FFF                     111              111         AAA         AAA
FFF                  111111111        111111111      AAA         AAA
FFF                  111111111        111111111      AAA         AAA
FFF                  111111111        111111111      AAA         AAA
```

```
**FILE**ID**COMMON                                I 11




  CCCCCCCC    OOOOOO    MM      MM  MM      MM    OOOOOO    NN      NN
  CCCCCCCC    OOOOOO    MM      MM  MM      MM    OOOOOO    NN      NN
CC          OO      OO  MMMM  MMMM  MMMM  MMMM  OO      OO  NN      NN
CC          OO      OO  MMMM  MMMM  MMMM  MMMM  OO      OO  NN      NN
CC          OO      OO  MM  MM  MM  MM  MM  MM  OO      OO  NNNN    NN
CC          OO      OO  MM  MM  MM  MM  MM  MM  OO      OO  NNNN    NN
CC          OO      OO  MM      MM  MM      MM  OO      OO  NN  NN  NN
CC          OO      OO  MM      MM  MM      MM  OO      OO  NN  NN  NN
CC          OO      OO  MM      MM  MM      MM  OO      OO  NN    NNNN
CC          OO      OO  MM      MM  MM      MM  OO      OO  NN    NNNN
CC          OO      OO  MM      MM  MM      MM  OO      OO  NN      NN      ....
CC          OO      OO  MM      MM  MM      MM  OO      OO  NN      NN      ....
  CCCCCCCC    OOOOOO    MM      MM  MM      MM    OOOOOO    NN      NN      ....
  CCCCCCCC    OOOOOO    MM      MM  MM      MM    OOOOOO    NN      NN      ....

LL              IIIIII      SSSSSSSS
LL              IIIIII      SSSSSSSS
LL                II      SS
LL                II      SS
LL                II      SS
LL                II      SS
LL                II        SSSSSS
LL                II        SSSSSS
LL                II              SS
LL                II              SS
LL                II              SS
LL                II              SS
LLLLLLLLLL      IIIIII    SSSSSSSS
LLLLLLLLLL      IIIIII    SSSSSSSS
```

```
0 MODULE COMMON (
0                 LANGUAGE (BLISS32),
0                 IDENT = 'V04-000'
0                 ) =
1 BEGIN
1
1 !
1 !****************************************************************************
1 !*                                                                          *
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1 !*                                                                          *
1 !*                                                                          *
1 !****************************************************************************
1
1 !++
1 !
1 ! FACILITY:  F11ACP Structure Level 1
1 !
1 ! ABSTRACT:
1 !
1 !       This module is the common impure area of FCP, including the
1 !       routine that initializes it for each request.
1 !
1 ! ENVIRONMENT:
1 !
1 !       STARLET operating system, including privileged system services
1 !       and internal exec routines.
1 !
1 !--
1 !
1 !
1 ! AUTHOR:  Andrew C. Goldstein,  CREATION DATE:  20-Dec-1976  23:42
1 !
1 ! MODIFIED BY:
1 !
1 !       V03-002 ACG0408         Andrew C. Goldstein,    20-Mar-1984  16:36
1 !               Reduce size of LOCAL_ARB
1 !
1 !       V03-001 ACG0346         Andrew C. Goldstein,    2-Aug-1983  15:15
1 !               Remove job controller mailbox cells
1 !
```

```
:   58          0058  1 !       V02-003 ACG0245         Andrew C. Goldstein,    22-Dec-1981  20:18
:   59          0059  1 !               Add job controller mailbox channel
:   60          0060  1 !
:   61          0061  1 !       V02-002 ACG38100        Andrew C. Goldstein,    3-Jun-1981  11:50
:   62          0062  1 !               Fix granting of SYSPRV to volume owner
:   63          0063  1 !
:   64          0064  1 !       V02-001 ACG0167         Andrew C. Goldstein,    7-May-1980  18:48
:   65          0065  1 !               Previous revision history moved to F11A.REV
:   66          0066  1 !**
:   67          0067  1
:   68          0068  1
:   69          0069  1 LIBRARY 'SYS$LIBRARY:LIB.L32';
:   70          0070  1 REQUIRE 'SRC$:FCPDEF.B32';
:   71          0385  1
:   72          0386  1
:   73          0387  1 FORWARD ROUTINE
:   74          0388  1         INIT_COMMON     : NOVALUE,      ! initialize global storage
:   75          0389  1         SAVE_CONTEXT    : NOVALUE,      ! save reentrant context area
:   76          0390  1         RESTORE_CONTEXT : NOVALUE;      ! restore reentrant context area
```

```
1 !+
1 !
1 ! ACP global inpure area
1 !
1 !-
1
1 GLOBAL
1         QUEUE_HEAD      : REF BBLOCK,   ! pointer to ACP queue header
1         IO_CHANNEL,                     ! channel number for all I/O
1         DISK_UCB        : REF BBLOCK,   ! original UCB of our channel
1
1 ! The remaining locations are initialized to known values (mainly zero)
1 ! by the routine.
1 !
1         USER_STATUS     : VECTOR [2],   ! I/O status to be returned to user
1         IO_STATUS       : VECTOR [2],   ! status block for FCP I/O
1         IO_PACKET       : REF BBLOCK,   ! address of current I/O request packet
1         CURRENT_UCB     : REF BBLOCK,   ! address of UCB of current request
1         CURRENT_VCB     : REF BBLOCK,   ! address of VCB of current request
1         NEW_FID,                        ! file number of unrecorded file ID
1         HEADER_LBN,                     ! LBN of last file header read
1         DIR_FCB         : REF BBLOCK,   ! FCB of directory file
1         DIR_WINDOW      : REF BBLOCK,   ! window of current directory
1         BITMAP_VBN,                     ! VBN of current storage map block
1         BITMAP_BUFFER   : REF BBLOCK,   ! address of current storage map block
1         DIR_VBN,                        ! VBN of current directory block
1         DIR_BUFFER      : REF BBLOCK,   ! address of current directory block
1         DIR_RECORD,                     ! record number of found directory entry
1         HIGHEST_VERSION,                ! highest version number in directory
1         LOWEST_VERSION,                 ! lowest version number in directory
1         FIRST_FREE,                     ! record number of first free entry
1         SUPER_FID       : BBLOCK [FID$C_LENGTH], ! file ID of superseded file
1         LOCAL_FIB       : BBLOCK [FIB$C_LENGTH], ! primary FIB of this operation
1         SECOND_FIB      : BBLOCK [FIB$C_LENGTH], ! FIB for secondary file operation
1         LOCAL_ARB       : BBLOCK [ARB$C_HEADER], ! local copy of caller's ARB
1
1                                         ! The following locations are the re-enterable
1                                         ! context area and must be saved when an
1                                         ! secondary operation is performed.
1         CONTEXT_START   : VECTOR [0],   ! ***** The next item must be CLEANUP_FLAGS
1         CLEANUP_FLAGS   : BITVECTOR [32], ! cleanup action flags
1         FILE_HEADER     : REF BBLOCK,   ! address of current file header
1         UNREC_LBN,                      ! start LBN of unrecorded blocks
1         UNREC_COUNT,                    ! count of unrecorded blocks
1         PRIMARY_FCB     : REF BBLOCK,   ! address of primary file FCB
1         CURRENT_WINDOW  : REF BBLOCK,   ! address of file window
1         CURRENT_FIB     : REF BBLOCK,   ! pointer to FIB currently in use
1         CONTEXT_END     : VECTOR [0];
1
1 GLOBAL LITERAL
1         CONTEXT_SIZE    = CONTEXT_END - CONTEXT_START; ! byte count of context area
1
1 GLOBAL
1         CONTEXT_SAVE    : VECTOR [CONTEXT_SIZE, BYTE], ! area to save primary context
1
1         IMPURE_END      : VECTOR [0];   ! end of impure area
1
```

```
;   135         0448  1 GLOBAL LITERAL
;   136         0449  1         IMPURE_SIZE     = IMPURE_END - USER_STATUS; ! byte count of impure area
```

```
;

; S
; R
; E
; L
; L
; M
; C
```

```
1 GLOBAL ROUTINE INIT_COMMON : NOVALUE =
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !
1 !       This routine contains the impure data base for FCP, and is called
1 !       to initialize it.
1 !
1 ! CALLING SEQUENCE:
1 !       INIT_COMMON ()
1 !
1 ! INPUT PARAMETERS:
1 !       NONE
1 !
1 ! IMPLICIT INPUTS:
1 !       NONE
1 !
1 ! OUTPUT PARAMETERS:
1 !       NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !       NONE
1 !
1 ! ROUTINE VALUE:
1 !       NONE
1 !
1 ! SIDE EFFECTS:
1 !       DATABASE INITIALIZED
1 !
1 !--
1
2 BEGIN
2
2 ! Initialization consists of zeroing the impure area and then setting the
2 ! user request status to 1 (success).
2 !
2
2 CH$FILL (0, IMPURE_SIZE, USER_STATUS);
2 USER_STATUS[0] = 1;
2
1 END;                                     ! end of routine INIT_COMMON


                                                 .TITLE  COMMON
                                                 .IDENT  \V04-000\

                                                 .PSECT  $LOCKEDD1$,NOEXE,2

                                00000 QUEUE_HEAD::
                                                 .BLKB   4
                                00004 IO_CHANNEL::
                                                 .BLKB   4
                                00008 DISK_UCB::
                                                 .BLKB   4
                                0000C USER_STATUS::
                                                 .BLKB   8
```

```
00014 IO_STATUS::
              .BLKB    8
0001C IO_PACKET::
              .BLKB    4
00020 CURRENT_UCB::
              .BLKB    4
00024 CURRENT_VCB::
              .BLKB    4
00028 NEW_FID::
              .BLKB    4
0002C HEADER_LBN::
              .BLKB    4
00030 DIR_FCB::
              .BLKB    4
00034 DIR_WINDOW::
              .BLKB    4
00038 BITMAP_VBN::
              .BLKB    4
0003C BITMAP_BUFFER::
              .BLKB    4
00040 DIR_VBN::
              .BLKB    4
00044 DIR_BUFFER::
              .BLKB    4
00048 DIR_RECORD::
              .BLKB    4
0004C HIGHEST_VERSION::
              .BLKB    4
00050 LOWEST_VERSION::
              .BLKB    4
00054 FIRST_FREE::
              .BLKB    4
00058 SUPER_FID::
              .BLKB    6
0005E         .BLKB    2
00060 LOCAL_FIB::
              .BLKB    64
000A0 SECOND_FIB::
              .BLKB    64
000E0 LOCAL_ARB::
              .BLKB    48
00110 CONTEXT_START::
              .BLKB    0
00110 CLEANUP_FLAGS::
              .BLKB    4
00114 FILE_HEADER::
              .BLKB    4
00118 UNREC_LBN::
              .BLKB    4
0011C UNREC_COUNT::
              .BLKB    4
00120 PRIMARY_FCB::
              .BLKB    4
00124 CURRENT_WINDOW::
              .BLKB    4
00128 CURRENT_FIB::
              .BLKB    4
```

```
                                                              0012C CONTEXT_END::
                                                                             .BLKB    0
                                                              0012C CONTEXT_SAVE::
                                                                             .BLKB    28
                                                              00148 IMPURE_END::
                                                                             .BLKB    0

                                                                    CONTEXT_SIZE==        28
                                                                    IMPURE_SIZE==         316


                                                                             .PSECT   $CODE$,NOWRT,2

                                                         003C 00000          .ENTRY   INIT_COMMON, Save R2,R3,R4,R5                 ; 0450
    013C   8F             00            6E              00  2C 00002          MOVC5    #0, (SP), #0, #316, USER_STATUS                ; 0488
                                                0000'   CF     00009                                                                 ;
                                 0000'  CF              01  D0 0000C          MOVL     #1, USER_STATUS                                ; 0489
                                                            04 00011          RET                                                     ; 0491

; Routine Size:  18 bytes,    Routine Base:  $CODE$ + 0000
```

```
1 GLOBAL ROUTINE SAVE_CONTEXT : NOVALUE =
1
1 !++
1 !
1 ! FUNCTIONAL DESCRIPTION:
1 !
1 !       This routine saves the reentrant context area in the context save
1 !       area and initializes the context for a secondary operation.
1 !
1 !
1 ! CALLING SEQUENCE:
1 !       SAVE_CONTEXT ()
1 !
1 ! INPUT PARAMETERS:
1 !       NONE
1 !
1 ! IMPLICIT INPUTS:
1 !       ACP impure area
1 !
1 ! OUTPUT PARAMETERS:
1 !       NONE
1 !
1 ! IMPLICIT OUTPUTS:
1 !       NONE
1 !
1 ! ROUTINE VALUE:
1 !       NONE
1 !
1 ! SIDE EFFECTS:
1 !       NONE
1 !
1 !--
1
2 BEGIN
2
2 MAP
2       CONTEXT_SAVE    : BITVECTOR;    ! map saved copy of cleanup flags
2
2
2 ! Check for excessive recursion in the ACP; then save the context and do the
2 ! setup.
2 !
2
2 IF .CONTEXT_SAVE NEQ 0
2 THEN BUG_CHECK (ACPRECURS, FATAL, 'Attempted recursion in ACP secondary operation');
2
2 CH$MOVE (CONTEXT_SIZE, CONTEXT_START, CONTEXT_SAVE);
2 CH$FILL (0, CONTEXT_SIZE, CONTEXT_START);
2 CH$FILL (0, FIB$C_LENGTH, SECOND_FIB);
2 CURRENT_FIB = SECOND_FIB;
2 CONTEXT_SAVE[CLF_CLEANUP] = 1;
2
1 END;                                  ! end of routine SAVE_CONTEXT


                                                .EXTRN  BUG$_ACPRECURS
```

```
                                                      007C 00000         .ENTRY  SAVE_CONTEXT, Save R2,R3,R4,R5,R6             ; 0492
                                56      0000'   CF    9E 00002           MOVAB   CONTEXT_SAVE, R6                              ;
                                                66    D5 00007           TSTL    CONTEXT_SAVE                                  ; 0535
                                                04    13 00009           BEQL    1$                                            ;
                                                      FEFF 0000B         BUGW                                                  ; 0536
                                                     0000* 0000D         .WORD   <BUG$_ACPRECURS!4>                            ;
                        66        E4    A6              1C    28 0000F 1$:     MOVC3   #28, CONTEXT_START, CONTEXT_SAVE              ; 0538
          1C            00              6E              00    2C 00014           MOVC5   #0, (SP), #0, #28, CONTEXT_START              ; 0539
                                              E4        A6       00019                                                         ;
   0040   8F            00              6E              00    2C 0001B           MOVC5   #0, (SP), #0, #64, SECOND_FIB                 ; 0540
                                            FF74        C6       00022                                                         ;
                                  FC    A6  FF74        C6    9E 00025           MOVAB   SECOND_FIB, CURRENT_FIB                       ; 0541
                                  01    A6              02    88 0002B           BISB2   #2, CONTEXT_SAVE+1                            ; 0542
                                                              04 0002F           RET                                                   ; 0544

; Routine Size:  48 bytes,    Routine Base:  $CODE$ + 0012
;  235          0545  1 GLOBAL ROUTINE RESTORE_CONTEXT : NOVALUE =
;  236          0546  1
;  237          0547  1 !++
;  238          0548  1 !
;  239          0549  1 ! FUNCTIONAL DESCRIPTION:
;  240          0550  1 !
;  241          0551  1 !       This routine restores the reentrant context area from the context save
;  242          0552  1 !       area.
;  243          0553  1 !
;  244          0554  1 !
;  245          0555  1 ! CALLING SEQUENCE:
;  246          0556  1 !       RESTORE_CONTEXT ()
;  247          0557  1 !
;  248          0558  1 ! INPUT PARAMETERS:
;  249          0559  1 !       NONE
;  250          0560  1 !
;  251          0561  1 ! IMPLICIT INPUTS:
;  252          0562  1 !       ACP impure area
;  253          0563  1 !
;  254          0564  1 ! OUTPUT PARAMETERS:
;  255          0565  1 !       NONE
;  256          0566  1 !
;  257          0567  1 ! IMPLICIT OUTPUTS:
;  258          0568  1 !       NONE
;  259          0569  1 !
;  260          0570  1 ! ROUTINE VALUE:
;  261          0571  1 !       NONE
;  262          0572  1 !
;  263          0573  1 ! SIDE EFFECTS:
;  264          0574  1 !       NONE
;  265          0575  1 !
;  266          0576  1 !--
;  267          0577  1
;  268          0578  2 BEGIN
;  269          0579  2
;  270          0580  2 MAP
;  271          0581  2         CONTEXT_SAVE    : BITVECTOR;    ! map saved copy of cleanup flags
;  272          0582  2
;  273          0583  2 !
;  274          0584  2 ! Check for excessive unstacking in the ACP; then restore the context.
;  275          0585  2 !
;  276          0586  2
;  277          0587  2 IF .CONTEXT_SAVE EQL 0
;  278          0588  2 THEN BUG_CHECK (ACPUNSTAK, FATAL, 'Attempted unstack in ACP primary context');
;  279          0589  2
;  280          0590  2 CH$MOVE (CONTEXT_SIZE, CONTEXT_SAVE, CONTEXT_START);
;  281          0591  2 CLEANUP_FLAGS[CLF_CLEANUP] = 0;
;  282          0592  2 CONTEXT_SAVE = 0;
;  283          0593  2
;  284          0594  1 END;                                    ! end of routine RESTORE_CONTEXT


                                                        .EXTRN  BUGS_ACPUNSTAK

                                   007C 00000           .ENTRY  RESTORE_CONTEXT, Save R2,R3,R4,R5,R6             ; 0545
                   56     0000'  CF   9E 00002           MOVAB   CONTEXT_SAVE, R6                                 ;
```

```
                                                    66  D5 00007         TSTL     CONTEXT_SAVE                                         ; 0587
                                                    04  12 00009         BNEQ     1$                                                   ;
                                                      FEFF 0000B         BUGW                                                          ; 0588
                                                     0000* 0000D         .WORD    <BUG$_ACPUNSTAK!4>                                   ;
                    E4    A6             66         1C  28 0000F  1$:    MOVC3    #28, CONTEXT_SAVE, CONTEXT_START                     ; 0590
                                   E5    A6         02  8A 00014         BICB2    #2, CLEANUP_FLAGS+1                                  ; 0591
                                                    66  D4 00018         CLRL     CONTEXT_SAVE                                         ; 0592
                                                        04 0001A         RET                                                           ; 0594

; Routine Size:  27 bytes,    Routine Base:  $CODE$ + 0042


;  285          0595  1
;  286          0596  1 END
;  287          0597  0 ELUDOM




;                                        PSECT SUMMARY
;
;       Name                        Bytes                           Attributes
;
;  $LOCKEDD1$                             328  NOVEC,  WRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;  $CODE$                                  93  NOVEC,NOWRT,  RD ,  EXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;  .  ABS  .                                0  NOVEC,NOWRT,NORD ,NOEXE,NOSHR,  LCL,  ABS,  CON,NOPIC,ALIGN(0)




;                                  Library Statistics
;
;                                                  -------- Symbols --------        Pages       Processing
;       File                                       Total    Loaded   Percent        Mapped      Time
;
;  _$255$DUA28:[SYSLIB]LIB.L32;1                   18619         4         0        1000          00:01.9





;                                          COMMAND QUALIFIERS

;       BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LIS$:COMMON/OBJ=OBJ$:COMMON MSRC$:COMMON/UPDATE=(ENH$:COMMON)

; Size:           93 code + 328 data bytes
; Run Time:          00:07.3
; Elapsed Time:      00:24.4
; Lines/CPU Min:      4940
; Lexemes/CPU-Min:  12223
; Memory Used:   73 pages
; Compilation Complete
```

0164 AH-BT13A-SE
VAX/VMS V4.0

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